

REMARKS

This reply encompasses a bona fide attempt to overcome the rejections raised by the Examiner and presents amendments as well as reasons why the applicants believe that the claimed invention is novel and unobvious over the closest prior art of record, thereby placing
5 the present application in a condition for allowance.

Regarding Claim Status

Claims 1-36 were presented for examination. The Preliminary Amendment filed on 02/07/2002 sufficiently corrected the informality regarding the numbering of the claims.
10 Since 37 CFR 1.126 requires that the original numbering of the claims to be preserved throughout the prosecution, this amendment preserves the original numbering of the claims and includes previously presented claim 36.

Original claims 1-16, 19-32, and 35 were rejected. Original claims 17 and 18 were objected
15 to as being dependent upon a rejected base claim, but have been indicated as would be allowable. Original claims 33 and 34 have been allowed. Applicants thank the Examiner for indicating the allowable subject matter in these claims. Claims 1, 9, 16-17, 25, and 33-35 are amended. No new matter is introduced. No claim is newly added or cancelled. By the amendments submitted herein, claims 1-36 are pending.

Regarding 35 U.S.C. § 102 Rejections

Claims 25-27 were rejected under 35 U.S.C. § 102(e) as being anticipated by Trevino *et al.* (U.S. Patent Application Publication US2002/0012056, hereinafter referred to as "Trevino").
25 The rejections are respectfully traversed.

TREVINO NEITHER EXPRESSLY NOR INHERENTLY TEACH EACH AND EVERY CLAIM ELEMENT AS DESCRIBED IN THE PRESENT APPLICATION

"A claim is anticipated only if each and every element as set forth in the claim is found,
30 either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

“The identical invention must be shown in as complete detail as is contained in the ... claim.”
Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

5 Trevino is hereby distinguished at least because Trevino neither teaches nor describes “an estimation means” identical to and in as complete detail as is contained in the claim. The cited paragraph [0048] mentions nothing about an estimation means capable of determining an estimated illumination on an image sensor from a multiplicity of measurements. Rather, step 412 of Trevino merely suggests “processing” at most *two* integration values, based on a
10 weighted average therebetween, to arrive at an output signal.

Nevertheless, claim 25 is amended herein to more particularly point out and distinctly claim the subject matter which the applicants regard as the invention. No new matter is introduced. Support for the amendment can be found in the Specifically as originally submitted [see, e.g.,
15 Spec. page 16, lines 1-14].

In summary, **Trevino does not teach or describe illumination (photocurrent) estimation from multiple (two or more) captures and Trevino does not show or describe an identical invention in as complete detail as is contained in claim 25.** Accordingly, claim
20 25 is submitted to be patentable over Trevino under 35 U.S.C. § 102(e). Reliance is placed on *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) and *Ex parte Kochan*, 131 USPQ 204 (Bd. App. 1960) for the allowance of dependent claims 26-32 since they differ in scope from their parent independent claim 25 which is submitted to be patentable.

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Regarding 35 U.S.C. § 103 Rejections

Claims 1-3, 8-10, 15, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Trevino in view of Yoshida (JP Application No. 63-201406). The rejections are respectfully traversed. Please note that, as recorded on 02/22/2002, the present application is
30 assigned to a single entity (owner) having the entire right, title, and interest thereto.

As discussed above, Trevino lacks teachings on how to determine an estimated optimal illumination on a sensor from multiple captures. **The Examiner has correctly pointed out that Trevino also fails to teach or suggest how multiple samples can be captured non-destructively during an exposure period.**

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Yoshida does seem to suggest a non-destructive read-type imager. However, it is not clear how, from a single paragraph of Yoshida and in view of Trevino, one of ordinary skill in the art could have arrived at a sensor capable of *capturing* non-destructively a plurality of image samples *during an exposure period* and performing *optimal illumination estimation* on the sensor from those multiple captures.

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When applying 35 USC 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

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Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). *See also*, MPEP 2141.

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At least according to (B), independent claims 1 and 9 are submitted to be unobvious over Trevino in view of Yoshida because neither Trevino nor Yoshida suggests the desirability to modify one another to make the alleged combination. Moreover, the alleged combination of Trevino and Yoshida still fails to teach each and every elements as set forth in the claims. For example, Trevino lacks detailed description on performing a (non-recursive) optimal illumination estimation on a sensor from multiple (two or more) captures.

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Nevertheless, claims 1 and 9 are amended herein to more particularly point out and distinctly claim the subject matter which the applicants regard as the invention. No new matter is

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introduced. Support for the amendment can be found in the Specifically as originally submitted [see, e.g., Spec. page 16, lines 10-12].

Accordingly, independent claims 1 and 9 are submitted to be patentable over Trevino in view of Yoshida under 35 U.S.C. § 103(a). Reliance is placed on *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) and *Ex parte Kochan*, 131 USPQ 204 (Bd. App. 1960) for the allowance of dependent claims 2-8, 10-15, and 36 since they differ in scope from their respective parent independent claims 1 and 19 which are submitted to be patentable, notwithstanding the additionally applied references, Pucker, II *et al.* (U.S. Patent No. 6,298,144, hereinafter referred to as “Pucker”), with regard to claims 4, 11, and 36, and Sezan *et al.* (U.S. Patent No. 5,600,731, hereinafter referred to as “Sezan”), with regard to claims 5-7, 12-14. Both Pucker and Sezan use the term “pixel” to refer to the basic unit of an image, not of an image sensor. They are not considered materially relevant to the claimed invention as a whole.

Claims 16, 19-20, and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hidari (U.S. Patent No. 5,905,533) over Yoshida. The rejections are respectfully traversed.

As a whole, the claimed invention is directed to a novel illumination estimation method that, not only provides high dynamic range, but also addresses *motion blur* [Spec. pages 14-15]. Contrastingly, as a whole, Hidari is directed to an image processing apparatus which processes a still image produced by an image pickup device or a still image area in a motion picture. It is unclear how Hidari is applicable to the claimed invention.

According to Hidari, when the *diaphragm* of the image pickup means for picking up the still object is stopped down from a proper stop value, the *still image data produced* by the image pickup means is integrated by the number of times of integration determined according to the stop value, and the integrated still image data is modified for each integration according to the number of times of integration and the stop value. As such, the level of the output signal of the still image is same as that of the signal level for the proper stop value.

In other words, Hidari corrects a change in the level of the image signal. Hidari does not teach or suggest recursively estimating an optimal illumination on a sensor from multiple image samples non-destructively captured during a single exposure period in which all or essentially all samples before saturation are used [Spec. page 15, lines 2-3, and page 16, lines 1-14]. Yoshida's mere recitation of "non-destructive read-type imager" is insufficient to fill the void of Hidari. In addition, neither Hidari nor Yoshida suggests the desirability to modify one another so to arrive at an invention as set forth in claim 16. Furthermore, neither Hidari nor Yoshida mentions CMOS image sensors. Thus, the inherent features of CMOS image sensors do not flow from the combined teachings of Hidari and Yoshida.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

The applicability of Hidari notwithstanding, claim 16 is amended herein to more particularly point out and distinctly claim the subject matter which the applicants regard as the invention.

No new matter is introduced. Support for the amendment can be found in the Specifically as originally submitted [see, e.g., Spec. page 15, lines 2-3, and page 16, lines 1-14].

Accordingly, independent claim 16 is submitted to be patentable over Hidari in view of
5 Yoshida under 35 U.S.C. § 103(a). Reliance is placed on *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) and *Ex parte Kochan*, 131 USPQ 204 (Bd. App. 1960) for the allowance of dependent claims 19-24 since they differ in scope from their parent independent claim 16 which is submitted to be patentable, notwithstanding the additionally applied reference, Sezan, with regard to claims 21-23. As submitted above, Sezan uses the term “pixel” to refer
10 to the basic unit of an image, not of an image sensor. Sezan is a fundamentally different invention. There is no desirability to combine or modify in Hidari, Yoshida, and Sezan.

Claims 29 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Trevino
15 in view of Pucker. The rejections are respectfully traversed.

As discussed above, Trevino lacks teachings on estimating optimal illumination from two or more samples non-destructively captured on a sensor. Pucker does not and cannot filled the void of Trevino at least because Pucker uses the term “pixel” to refer to the basic unit of an
20 image, not of an image sensor. A sequence of images provided by an image sensor, as in Pucker, are patently different from two image samples *captured* by a pixel cell, as in Trevino. Accordingly, claims 29 and 35 are submitted to be patentable over Trevino and Pucker.

It is respectfully submitted that none of the applied references, Trevino, Yoshida, Pucker, and
25 Sezan, suggests the desirability to combine or modify one another so to arrive at an invention as set forth in the present claims. Since obviousness cannot be established absent some teaching, suggestion or incentive supporting the modification/combination, the Examiner has not established a *prima facie* case of obviousness (*ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F. 2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). Absent such a
30 showing in the prior art, the Examiner has impermissibly used the applicant’s teaching to hunt through the prior art for the claimed elements and combine them as claimed (see *In re*

Vaeck, 947 F. 2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991); In re Bond, 910 F. 2d 831, 15 USPQ 2d 1566 (Fed. Cir. 1990); In re Laskowski, 871 F. 2d 115, 117, 10 USPQ 2d 1397, 1398 (Fed. Cir. 1989)). The use of hindsight is never permissible to establish obviousness.

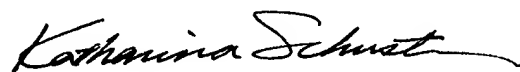
5 *Conclusion*

For the foregoing reasons, it is respectfully submitted that the claimed invention recites subject matter not reached by Trevino, Yoshida, Pucker, and Sezan, individually and in their various combinations, under 35 U.S.C. §§ 102(e) and 103(a). Accordingly, claims 1-16, 19-32, and 35-36 are submitted to be patentable and therefore should be allowed. Claims 17-18
10 and 33-34 have been indicated as would be allowable.

This Response/Amendment is submitted to be complete and proper in that it places the present application in a condition for allowance without adding new matters. Since the Examiner has done a thorough search in view of the entire application disclosure and cited
15 the best references at his or her command under 37 CFR 1.104, no new search should be necessary. Favorable consideration and a Notice of Allowance of all pending claims 1-36 are therefore earnestly solicited.

The Examiner is sincerely invited to telephone the undersigned at 650-331-8413 for
20 discussing an Examiner's Amendment or any suggested actions for accelerating prosecution and moving the present application to allowance.

Respectfully submitted,



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